23. (Currently Amended) A method as in claim [[22]] 21 wherein one of the predefined condition relates to the expiration of a predetermined period of time.

Remarks/Arguments

This Amendment is filed in response to the Final Office Action mailed April 19, 2007 and the Notice of Panel Decision from Pre-Appeal Brief Review mailed October 31, 2007. Claims 1-14 and 16-23 are pending, and claims 1-4, 6-13, 16-17, 19, 21 and 23 have been amended. Reconsideration and reexamination are respectfully requested.

Rejection under 35 U.S.C. § 102(b)

Claims 1-3, 7, 8 and 21-23 are rejected as being anticipated by Bartels (U.S. Patent No. 4,718,858). The Examiner asserts that Bartels shows a firing rate control mode means 55 as providing a low fire hold operation at the outset of the operation of the device, pointing to column 6, lines 25-64 for support. The Examiner then asserts that this low fire hold will be maintained for a fixed time period, unless the pressure increases or decreases above or below P_{Hi} or P_{Lo}, which are asserted to be the predefined conditions.

Applicants respectfully disagree. However, to move this case along, claim 1 has been amended to recite:

> 1. (Currently Amended) A method of operating a multistage modulating boiler system, the multi-stage modulating boiler system including two or more stages of modulating boilers, the multi-stage modulating boiler system adapted to provide heat to ~~maintain a first setpoint for~~ a circulating fluid heated by the multi-stage modulating boiler system and to maintain a first temperature setpoint, the method comprising:
>
> receiving an indication ~~a signal indicating~~ that a stage of the multi-stage modulating boiler system should be activated and whether the stage is currently a first stage of the multi-stage modulating boiler to be activated;
>
> receiving a normal firing rate for the stage, the normal firing rate is based on an error signal that is related to a deviation between the first temperature set point and a temperature of the circulating fluid in the multi-stage modulating boiler system;
>
> activating the stage at the normal firing rate if the stage is not the first stage of the multi-stage boiler to be activated;
>
> activating the stage at a first firing rate if the stage is the first stage of the multi-stage boiler to be activated, wherein the first firing rate is less than the normal firing rate; ~~and~~
>
> maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time; and

activating the stage at the normal firing rate after the period of time expires.

Bartels does not appear to disclose such a method. As such, claim 1 is believed to be clearly patentable over Bartels. For similar and other reasons, dependent claims 2, 3 and 7 are also believed to be clearly patentable over Bartels.

Now turning to claim 8, which now recites:

8. (Currently Amended) A controller for a multi-stage modulating boiler system having one or more modulating boiler stages, the controller configured to perform the steps of:

receiving an indication ~~a signal indicating~~ that a stage of the multi-stage modulating boiler system should be activated and whether the stage is currently a first stage of the multi-stage modulating boiler to be activated;

receiving a normal firing rate for the stage, the normal firing rate is based, at least in part, on a heat load on the multi-stage modulating boiler system;

activating the stage at a first firing rate if the stage is the first stage of the multi-stage modulating boiler to be activated, wherein the first firing rate is less than the normal firing rate; and

maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time.

Again, Bartels does not appear to disclose such a controller. As such, claim 8 is believed to be clearly patentable over Bartels.

Now turning to claim 21, which now recites:

21. (Currently Amended) A method of operating a multi-stage modulating boiler system, the multi-stage modulating boiler system adapted to provide heat to maintain a first setpoint for a fluid heated by the multi-stage modulating boiler system, the method comprising:

receiving a signal indicating that a stage of the multi-stage modulating boiler system should be activated;

activating the stage at a first firing rate; and

maintaining the first firing rate unless one or more predefined conditions occur, wherein one or more of the predefined conditions is related to a system temperature.

Bartels does not appear to disclose such a method. As such, claim 21 is believed to be clearly patentable over Bartels. For similar and other reasons, dependent claims 22-23 are also believed to be clearly patentable over Bartels.

Rejection under 35 U.S.C. § 103(a)

Claims 4-6, 9-14 and 16-20 are rejected as being unpatentable over Bartels in view of Pouchak (U.S. Patent No. 6,536,678). Applicants respectfully disagree for the reasons set forth in the Amendment filed June 19, 2007.

In any event, and as indicated above, claims 1 and 8 are believed to be clearly patentable over Bartels. Pouchak does not appear to remedy the shortcomings of Bartels. As such, dependent claims 4-6 and 9-10 are believed to be clearly patentable over Bartels in view of Pouchak.

Regarding independent claims 11, 12, 13, 16, 17, and 19, the Examiner asserts that Bartels discloses all of the limitations of the claims except for the boiler system comprising multiple stages. Applicants respectfully disagree. However, to move this case along, claim 11 has been amended to recite:

> 11. (Currently Amended) A method of controlling stages in a multi-stage modulating boiler system, the method comprising:
> receiving an indication that a stage of the multi-stage modulating boiler system that is not active is to become active;
> determining whether the stage is the first stage to become active; ~~and~~
> if the stage is the first stage to become active, activating the stage at a first firing rate and maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time; and
> activating the stage at second firing rate if the stage is not the first stage to become active.

Bartels does not appear to disclose such a method, nor does Pouchak appear to remedy the shortcomings of Bartels. As such, claim 11 is believed to be clearly patentable over Bartels in view of Pouchak.

Claim 12 now recites:

12. (Currently Amended) A controller for controlling a stage in a multi-stage modulating boiler system, the controller configured to perform the steps of:

receiving an indication that a stage of the multi-stage modulating boiler system that is not active is to become active;

determining whether the stage is the first stage to become active; ~~and~~

if the stage is the first stage to become active, activating the stage at a first firing rate and maintaining the first firing rate for a period of time unless a predefined condition that is related to a system temperature occurs during the period of time; and

activating the stage at second firing rate that is higher than the first firing rate if the stage is not the first stage to become active.

Bartels does not appear to disclose such a method, nor does Pouchak appear to remedy the shortcomings of Bartels. As such, claim 12 is believed to be clearly patentable over Bartels in view of Pouchak.

Independent claim 13 recites the specific method steps of:

determining whether to activate a stage of the multi-stage modulating boiler system when no stages are active; and, if so:

activating a stage; and

controlling the stage with a stable firing rate independent of heat load for a period of time unless one or more of a number of conditions is satisfied during the period of time, wherein one of the predefined conditions is related to a system temperature and another one of the conditions include whether the stage is no longer needed.

Emphasis added. Bartels does not appear to disclose such specific method steps. The Examiner has not addressed many of these specific method steps. The mere fact that Pouchak discloses the presence of a boiler system comprising multiple stages does not provide the necessary teaching, motivation or suggestion of the specific method steps recited in the claims. Dependent claim 14 recites the conditions also include whether it is determined that the stage cannot operate without potential damage at the stable firing rate. The Examiner has not addressed this claim element either, and neither Bartels nor Pouchak appear to teach or suggest such a step.

Additionally, the Examiner has not addressed the specific elements of the controller and systems recited in independent claims 16, 17, and 19. Neither Bartels nor Pouchak appear to teach or suggest the specific elements recited in the claims.

Reconsideration and reexamination are respectfully requested. It is believed that each of claims 1-14 and 16-23 is in condition for allowance, and issuance of a Notice of Allowance in due course is respectfully requested. If a telephone conference would be of assistance, please contact the undersigned attorney at 612-359-9348.

Respectfully submitted,

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